

Amendment to Final OA  
USSN 10/035,796  
Faxed with RCE on 7/15/2003

### REMARKS

By way of the present communication, applicant has amended claim 1 so that it is clear that the instantly claimed module assembly is not part of a gas chromatograph, but instead a stand alone unit that can be connected to a gas chromatograph by a fluid connection. Support for this can be found in the second full paragraph of page 10 of the instant application wherein it states:

"This entire auxiliary oven assembly is a modular unit so that it can be an article of manufacture separate from that of a gas chromatograph mainframe. That is, it can be independently manufactured and sold separate from the main gas chromatograph instrument (mainframe) to instrument or to end users of a gas chromatograph."

Thus, the term "stand alone" can be used for such an assembly.

Claim 1 has also been amended so that term "consisting essentially of" is used in place of "comprising", thus eliminating a detector.

Applicant has also amended claim 1 so that the term "one or more" with respect to the sampling valve has been canceled.

Applicant has also more specifically defined the type of column that can be used. That is one that is able to separate (detect) a chemical component selected from the group consisting of C<sub>1</sub> to C<sub>8</sub> hydrocarbons, hydrogen, helium, oxygen, nitrogen, carbon monoxide, carbon dioxide, hydrogen sulfide, sulfur dioxide, and carbonyl sulfide. Support for this can be found on lines 7-10 of page 6 of the instant specification.

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**Rejection under 35 USC 112. - Examiner's Position**

Claims 1, 5, 7, 8 and 10 have been rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention.

The Examiner points to the following: Claim 1, line 13 wherein the phrase "each one or more" does not make sense since claim 1 has been amended to recite only a single multiport sampling valve.

**Applicant's Position**

Applicant has amended claim 1 to exclude the phrase "each one or more". Therefore, applicant requests that the Examiner withdraw this rejection.

**First Rejection Under 35 USC 103(a)****Examiner's Position**

Claims 1, 2 and 8 have been rejected under 35 USC 103(a) as being unpatentable over US 6,453,725 (Dahlgren et al.) herein after Dahlgren, in view of GB 1089642, herein after GB.

It is the Examiner's position that Dahlgren discloses a gas chromatograph sample and column-switching valve, as shown in Figure 2 and an oven having sample inlets and outlets into the oven, a multiport valve having sample inlets and outlets that correspond to the inlets and outlets through the oven, a fixed volume sampling loop which is integral with the sampling valve; and two chromatograph columns fluidly connected to the sampling valve. The Examiner also notes that Dahlgren teaches the use of a multi-coiled detector to detect the various constituents separated in the columns. The Examiner further notes that although not shown in Dahlgren, a heater and an actuating mechanism associated with the sampling valve would be inherent to the functionality of the presently claimed invention since a heater is needed for the oven, and some

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actuating means is necessary to allow the multi-port valve to perform its sampling function. The Examiner also notes that Dahlgren fails to show placement of the oven within an exterior housing.

GB is cited as disclosing an apparatus used in gas chromatography comprising a furnace holding a multi-port sampling block, a sampling volume integral with the sampling block, and two columns. The furnace is located within an outer casing and a heating system is provided within the spacing between the casing and the furnace. The Examiner contends that it would have been obvious to one having ordinary skill in the art to provide an outer casing for an oven as a means of controlling temperature of the apparatus, as well as provided extra protection.

With respect to claim 8, the Examiner argues that the limitation on the particular type of column is an obvious choice of design for one having ordinary skill in the art as a way of maximizing the efficiency of the analyzer.

#### **Applicant's Position**

The presently claimed invention, as now claimed, is not directed to a gas chromatograph. The presently claimed invention is a "stand alone" oven assembly comprising a single sampling valve, a single column, a single sampling loop, a single heater, and a single valve actuator. There is no detector device associated with the oven assembly as claimed in claim 1. The oven assembly of the present invention is a stand alone article of manufacture and can be assembled separately and sold to users of gas chromatographs that merely need to connect the fluid transfer line from the column of the assembly to an inlet line of the gas chromatograph. None of the art cited by the Examiner relates to a modular oven assembly. For example, Dahlgren teaches a complex sampling valve that becomes an integral part of a gas chromatograph. There is no mention of a stand alone oven assembly in Dahlgren. GB relates to a chromatograph having various chromatograph elements formed and/or mounted in recesses in a single homogenous block, which elements are brought into operative association with the aid of passages within the

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block. Again, as with the Dahlgren teaching, there is no suggestion of a single stand alone oven assembly that does not contain a detector.

Therefore, it is applicant's position that the teaching of Dahlgren in view of GB does not suggest, nor make obvious, the instant invention as now claimed. Consequently, applicant requests that the Examiner reconsider and withdraw this rejection.

#### **Second Rejection Under 35 USC 103(a)**

#### **Examiner's Position**

Claims 7 is rejected under 35 USC 103(a) as being unpatentable over Dahlgren, in view of GB, as applied to claim 1 above, and further in view of US 5,338,514 hereinafter Morabito.

Morabito is cited as disclosing a vented capillary gas chromatograph apparatus comprising an oven, a multi-port sampling valve, a capillary column, and a detector mounted outside of the oven. The Examiner contends that providing a capillary gas chromatograph column would have been obvious to one of ordinary skill in the art because capillary columns are well known in the art in separate constituents.

#### **Applicant's Position**

It is applicant's position that the primary references, Dahlgren and GB fail to suggest a "stand alone" oven assembly as instantly claimed and that Morabito is cited as teaching capillary columns. Therefore, applicant requests that this rejection also be withdrawn.

#### **Third Rejection Under 35 USC 103(a).**

#### **Examiner's Position**

Claim 10 has been rejected under 35 USC 103(a) as being unpatentable over Dahlgren, in view of GB as applied to claims 1 and 7 above, and further in view of Morabito, Trocheset, US 5,049,509 hereinafter Szakasits, and US 5,435,169 hereinafter Mitra.

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Szakasits is cited as disclosing a chromatographic analyzer comprising a multi-port sampling valve, a sample loop, multiple columns, and multiple flame ionization detectors. Mitra is cited as disclosing a device for monitoring volatile organic compounds comprising a multi-port valve, a sampling loop, a column, and a detector. The Examiner contends that providing a chromatograph utilizing different detectors would have been obvious to one of ordinary skill in the art as a means of maximizing accuracy of detection by allowing one of ordinary skill in the art to take advantage of the benefits of utilizing one detector over another in combination with the benefits provided by utilizing a second, and different detector.

#### **Applicant's Position**

Applicant is no longer claiming multiple sampling valves, columns etc. It is applicant's position that the stand alone modular oven assembly is novel and unobvious over the cited art and as such, its' connection of a gas chromatograph would also be patentable. Therefore, applicant again requests that the Examiner reconsider and withdraw this rejection.

Applicant's attorney notes that other art has been made of record, but has not been cited against the claims.

In view of the above, it is applicants' position that the claims, as now amended, define a patentable invention over the art. Therefore, applicants request that the Examiner pass this application to allowance.

Respectfully submitted,

By 

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